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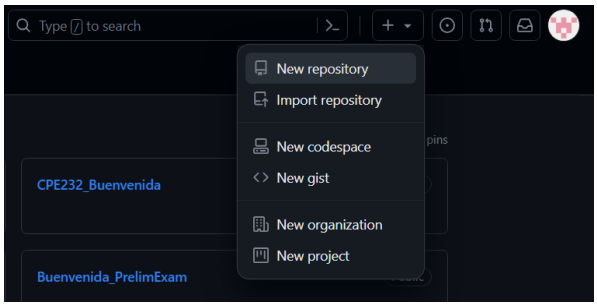
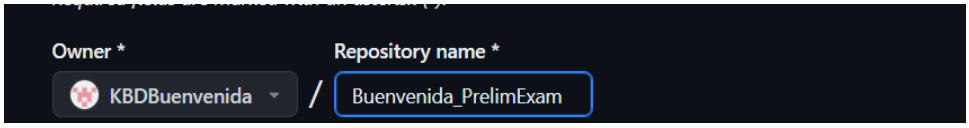
Course/Section: CpE31S4	**Date Submitted: 09/25/2023**
Instructor: Engr. Jonathan Taylar	**Semester and SY: 1st Semester 2023-2024**

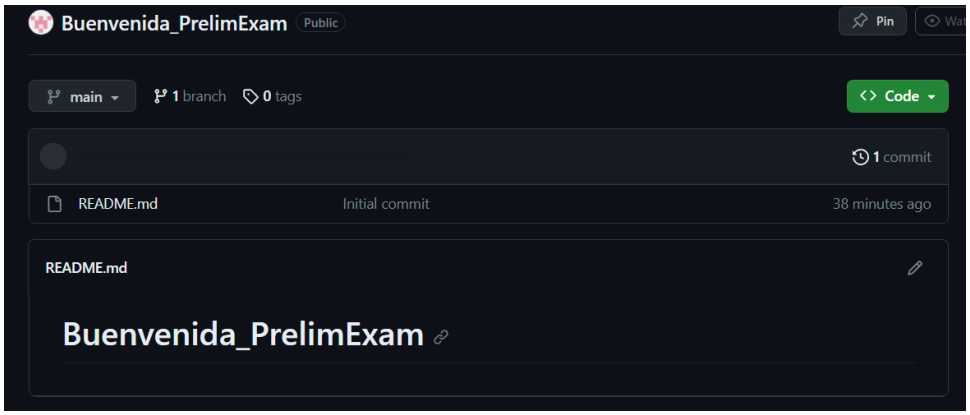
Tools Needed:

1. Control Node (CN) - 1
2. Manage Node (MN) - 1 Ubuntu
3. Manage Node (MN) - 1 CentOS

Procedure:

1. Note: You are required to create a document report of the steps you will do for this exam. All screenshots should be labeled and explained properly.
2. Create a repository in your GitHub account and label it as Surname_PrelimExam

INPUT	
PROCESS	

OUTPUT	

- **I created a new repository named "Buenvenida_PrelimExam" as instructed.**

3. Clone your new repository in your CN.

INPUT	`ken@controlNode:~/Buenvenida_PrelimExam$ git clone git@github.com:KBDBuenvenida/Buenvenida_PrelimExam.git`

OUTPUT	`ken@manageNode:~$ git clone git@github.com:KBDBuenvenida/Buenvenida_PrelimExam.git`
	`Cloning into 'Buenvenida_PrelimExam'...`
	`remote: Enumerating objects: 3, done.`
	`remote: Counting objects: 100% (3/3), done.`
	`remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0`
	`Receiving objects: 100% (3/3), done.`
	`ken@manageNode:~$ ls`

- **I used the git clone command to clone the newly created repository into my Control Node and it was a success.**

4. In your CN, create an inventory file and ansible.cfg files.

INPUT	`ken@controlNode:~/Buenvenida_PrelimExam$ sudo nano inventory` `ken@controlNode:~/Buenvenida_PrelimExam$ sudo nano ansible.cfg`

PROCESS	`GNU nano 6.2 inventory`
	`[myvirtualmachines]`
	`192.168.56.103`
	`192.168.56.102`

	GNU nano 6.2 ansible.cfg [defaults] inventory = inventory host_key_checking = False deprecation_warnings= False remote_user = ken private_key_file = ~/.ssh/
OUTPUT	ken@controlNode:~/Buenvenida_PrelimExam$ ls ansible.cfg config.yaml CPE232_Buenvenida inventory README.md

- **I created an ansible.cfg and inventory file to my new repository. I assigned the respective IP addresses of my CentOS and Ubuntu and I configured the ansible.cfg.**

5. Create an Ansible playbook that does the following with an input of a config.yaml file for both Manage Nodes
    - Installs the latest python3 and pip3

INPUT	ken@controlNode:~/Buenvenida_PrelimExam$ sudo nano config.yaml

PROCESS	---
	- hosts: all
	  become: true
	  tasks:
	
	  - name: installing python3 and pip3 Ubuntu
	  package:
	  name:
	  - "{{ python_package }}"
	  - "{{ pip_package }}"
	  state: latest
	  update_cache: yes
	
	  - name: setting pip3 as default pip
	  when: ansible_pkg_mgr == ['apt','yum']
	  alternatives:
	  name: pip
	  path: /usr/bin/pip3
	  priority: 2

OUTPUT

```
ken@controlNode:~/Buenvenida_PrelimExam$ ansible-playbook --ask-become-pass config.yaml
BECOME password:

PLAY [all] *********************************************************************

TASK [Gathering Facts] *********************************************************
ok: [192.168.56.102]
ok: [192.168.56.106]

TASK [installing python3 and pip3 Ubuntu] **************************************
skipping: [192.168.56.106]
ok: [192.168.56.102]

TASK [installing python3 and pip3 CentOS] **************************************
skipping: [192.168.56.102]
ok: [192.168.56.106]

PLAY RECAP *********************************************************************
192.168.56.102             : ok=2    changed=0    unreachable=0    failed=0    skipped=1    rescued=0
192.168.56.106             : ok=2    changed=0    unreachable=0    failed=0    skipped=1    rescued=0
```

- **What I did here is I created a task to install python3 and pip3 in Ubuntu and CentOS.**
  - use pip3 as default pip

INPUT

```
ken@controlNode:~/Buenvenida_PrelimExam$ sudo nano config.yaml
```

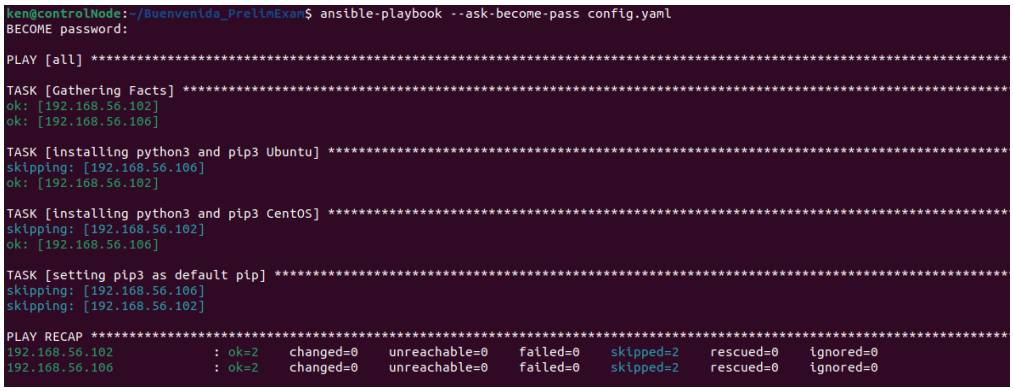
PROCESS

```yaml
---
- hosts: all
  become: true
  tasks:

  - name: installing python3 and pip3 Ubuntu
    apt:
      name:
        - python3
        - python3-pip
      state: latest
      update_cache: yes
    when: ansible_distribution == "Ubuntu"

  - name: installing python3 and pip3 CentOS
    dnf:
      name:
        - python3
      state: latest
      update_cache: yes
    when: ansible_distribution == "CentOS"

  - name: setting pip3 as default pip
    when: ansible_pkg_mgr == ['apt','yum']
    alternatives:
      name: pip
      path: /usr/bin/pip3
      priority: 2
```

OUTPUT	

- use python3 as default python

INPUT	
PROCESS	
OUTPUT	

- Install Java open-jdk

INPUT	
PROCESS	
OUTPUT	

- Create Motd containing the text defined by a variable defined in config.yaml file and if there is no variable input the default motd is "Ansible Managed node by (your user name)"
- Create a user with a variable defined in config.yaml

5. PUSH and COMMIT your PrelimExam in your GitHub repo

INPUT	

OUTPUT	

```
ken@controlNode:~/Buenvenida_PrelimExam$ git commit -m "Prelim Exam"
[main 21d477c] Prelim Exam
 6 files changed, 60 insertions(+)
 create mode 100644 CPE232_Buenvenida/README.md
 create mode 100644 CPE232_Buenvenida/ansible.cfg
 create mode 100644 CPE232_Buenvenida/install_apache.yml
 create mode 100644 ansible.cfg
 create mode 100644 config.yaml
 create mode 100644 inventory
ken@controlNode:~/Buenvenida_PrelimExam$ git push origin
Enumerating objects: 9, done.
Counting objects: 100% (9/9), done.
Compressing objects: 100% (7/7), done.
Writing objects: 100% (8/8), 1.16 KiB | 394.00 KiB/s, done.
Total 8 (delta 0), reused 0 (delta 0), pack-reused 0
To github.com:KBDBuenvenida/Buenvenida_PrelimExam.git
   5e4b211..21d477c  main -> main
```

6. Your document report should be submitted here.

7. For your prelim exam to be counted, please paste your repository link here.

- https://github.com/KBDBuenvenida/Buenvenida_PrelimExam.git